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| Course: | Chemistry |
| Course id:3ORT1O01 |
| Number of ECTS: 7 |
| Teacher: | Prof. dr Dubravka Štajner, Prof. dr Boris Popović |
| Course status | Mandatory |
| Number of active teaching classes (weekly) |
| Lectures: 4 | Practical classes: 3 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None/navesti ako ima |
| 1. Educational goal

Providing the basis for the formation of a certain view of the world, getting to know the most important principles, theories and laws of chemistry, providing theoretical basis for acquiring other skills, mastering specific skills related to the application of theoretical knowledge, the development of creative skills and practical skills necessary for the exercise of the profession. |
| 1. Educational outcomes

After completing the course of chemistry, students will train the application of theoretical and practical knowledge of chemistry both in life and in the acquisition of other knowledge (eg, biochemistry, agrochemistry, microbiology, physiology, etc.). In terms of practical knowledge and skills students will be able to compute in chemistry, handling basic laboratory equipment, perform basic volumetric determinations and basic instrumental measurements. In addition to this, students should be able to continue their studies or to apply their knowledge and understanding of the profession and to convey it to others. |
| 1. Course content

Theoretical classes:Introduction. Basic concepts and laws of chemistry. Chemical formulas and equations. Atomic structure and arrangement of electrons in an atom. The structure of atoms and the periodic table of elements. The structure of the molecule. Electron theory of chemical bonding. The main types of inorganic compounds. Intermolecular interactions and states. Basics of thermochemistry, chemical kinetics and chemical equilibrium. The solutions. Electrolytic dissociation and equilibrium in electrolyte solutions. Acids and bases. Hydrolysis and buffers. Oxidation-reduction processes. The redox potential. Colligative properties. Koliodi. Chemical properties of biogenic elements. The most important compounds of biogenic elements and their significance. Structure and classification of organic compounds. Hydrocarbons. Halogen, hydroxy and carbonyl hydrocarbons. Carboxylic acids and carboxylic acid derivatives of biologically important. Amines. Heterocyclic compounds. Carbohydrates. Simple and complex lipids. The peptides and proteins. The nucleic acids. Secondary biomolecules of plants and their significance.Practical teaching: Methods for separation and purification of substances. The stoichiometry. Quantifying the composition of the solution. Electrolytic dissociation and pH. Acid-base titration. Permanganometry. Potentiometric titration. Spectrophotometry. Hydrocarbons and for all their reaction. Chemical reactions of individual groups of organic compounds (alcohol, phenol, carbonyl compounds, carboxylic acids and acid derivatives). Chemical reactions of primary biomolecules. |
| 1. Teaching methods

Theoretical classes and practical exercises. |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam (izabrati) | Mandatory | Points |
| Lecture attendance | Yes | 3 | *Theoretical part of the exam/Oral part of the exam/Written part of the exam-tasks and theory* | Yes | 55 |
| Test | Yes | 20 |  |
| Exercise attendance | Yes | 2 |
| colloquium | Yes | 20 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Gorzynski Smith, J. | General, Organic &Biological Chemistry | Published by McGraw-Hill, New York. | 2010. |
|  | Štajner, D., Kevrešan, S. | Chemistry | Faculty of Agriculture, Novi Sad | 2006. |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme Accreditation Undergraduate Academic Studies Crop Science,Fruit Science and Viticulture Phytomedicine,Horticulture, Agricultural Ecology and Environmental Protection,Organic Agriculture  |
| Table 5.2 Course specification |